Predicting Subsequent Service Potential
for Former Army Prisoners

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Recent studies completed at the U.S. Army Retraining Brigade, a seven-week program for Army prisoners, at Fort Riley, Kansas, have provided comprehensive personality profiles of the Army's prisoner population. (Georgoulakis & Fox, 1982). Administering the Sixteen Personality Factor Questionnaire (Cattell, Eber, & Tatsuoka, 1970) to 550 prisoners entering the program, Fox (1980) identified 10 scales with significant differences between those individuals who later graduated and their counterparts who failed to complete the program. Georgoulakis (1982), with a battery of 7 scales from the California Psychological Inventory (Gough, 1957), 2 scales from the Edwards Personal Preference Schedule (Edwards, 1959), Rosenberg's (1965) Self-Esteem Scale, and Hudson's (1974) Index of Self-Esteem, found significant differences between graduates and non-graduates on 6 scales.

The results of the two studies are consistent, and suggest that the graduates of the retraining program have more self-control, a better sense of personal responsibility, and are more sociable than those who fail to complete the program. Non-graduates, on the other hand, tend to be more independent, aggressive, and more careless or indifferent. It is important to note that these differences exist a priori, and are not causal effects of the program. This suggests that individuals who complete the training successfully may well have personalities better suited to the specific requirements of the Retraining Brigade program, and probably to the Army environment in general, than their non-graduate counterparts.

Until only recently, individuals selected for graduation (and further military service) were identified solely by a consensus of opinion on the part of their training team cadre. The purpose of the present study is to determine the extent to which personality measures, employed as independent variables, can predict graduation from the Retraining Brigade and the quality of performance during subsequent assignments. A parallel purpose of the study is to determine whether military and personal history data, available from conventional military records, offer a pool of potentially superior predictor variables.

Methodology

Since the two studies were conducted with different samples, two series of analyses were required. In each case, the various personality dimensions were entered as the independent (predictor) variables into a discriminant function analysis in order to predict graduation (versus an administrative discharge) at the Retraining Brigade. Next, 10 military/personal history variables, collected from the same samples, were employed in precisely the same manner, and the results compared.

Of the 550 prisoners to whom the 16PF was administered, 263 graduated and were returned to subsequent duty assignments with new units. After a three-year folow-up, Separation Program Designators, collected from DD Form 214, were recorded for each of the graduates. Success was defined as an Honorable Discharge upon completing military service, while failure in the subsequent assignment was defined as a General Discharge, a discharge under other than Honorable conditions, additional military or civilian confinement, and those individuals dropped from rolls (DFR). Using these two categories as the dependent variable, the 16PF standard scores and the 10 background variables were each entered into discriminant function analyses in order to determine the extent to which subsequent duty performance could be predicted from data collected upon entering the program.

In all cases, variables were entered into the discriminant functions concurrently (rather than stepwise) in order to enhance direct comparisons. A total of 6 discrimant functions were computed, utilizing computer programs from the <u>Statistical Package for the Social Sciences</u> (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

Findings

a. Predicting Graduation or Discharge at the Retraining Brigade.

The discriminant functions in Table 1 represent linear combinations of the predictor variables which best distinguished between graduates (subsequently returned to new units) and those who were discharged after failing to complete the Retraining Brigade program successfully. The coefficients (interpreted in the same manner as factor weights) indicate the extent to which each variable contributed to differentiation between the two groups.

Both personality instruments produced discriminant functions which appear logically consistent. The 16PF described graduates as controlled (Q3), emotionally stable (C) and persevering (G), while portraying those who failed to graduate as aggressive (E) and independent (Q2). The CPI scales indicated that graduates tended to have a greater degree of self-acceptance (Sa), were more sociable (So), more responsible (Re) and had more self-control (Sc) than those who failed to complete training. Non-graduates had a greater need for autonomy, on the EPPS, and less self-esteem, on the Rosenberg (1965) scale.

Table 1

Predicting Graduation/Discharge from Training

16 Personality Factors (N=550)	Background Variables (N=550)
-.338 Q3 (Controlled)	-.600 Offense Category
-.313 C (Stable Emotionally)	-.560 Highest Pay Grade
-.312 G (Persevering)	-.352 Number of Dependents
.259 E (Assertive, Aggressive)	.342 Marital Status
.250 Q2 (Independent)	-.244 Court-Martial Category
-.243 H (Socially Bold)	.194 Race
.228 F (Happy-Go-Lucky)	.182 Months' Remaining Service
-.199 A (Outgoing, Friendly)	-.169 Age
-.182 Q4 (Tense, Frustrated)	

Group Centroids

-.394	Graduates	-.332
.361	Non-Graduates	.304

11 Selected Scales (N=100)	Background Variables (N=100)
.743 Self-Acceptance (CPI)	.588 Education Completed
.410 Socialization (CPI)	-.445 Highest Pay Grade
-.388 Social Presence (CPI)	-.443 Marital Status
.388 Self-Esteem (Rosenberg)	.384 Court-Martial Category
-.379 Need for Autonomy (EPPS)	.261 Number of Dependents
-.264 Dominance (CPI)	-.246 Offense Category
.178 Self-Control (CPI)	-.200 Age
-.114 Index of Self-Esteem (Hudson)	

Group Centroids

.281	Graduates	.344
-.281	Non-Graduates	-.352

Predictors	Eigenvalue	Wilks' Lambda	Graduates Correctly Predicted	Failures Correctly Predicted	Predict. Validity
16 PF (N=550)	.143	.874	67.3%	67.9%	.676
Background Data	.101	.907	58.2%	66.2%	.624
11-Scale Battery (N=100)	.079	.926	58.0%	57.0%	.575
Background Data	.122	.890	65.0%	60.0%	.625

Eigenvalues and Wilks' Lambda, measures of separation between groups, remain very weak even after the optimum linear combination had been found. The 16PF produced the best classification results, correctly identifying slightly more than two-thirds of both graduates and non-graduates. For the 11-scale battery, the magnitude of the coefficients on the discriminant function suggests that several of the scales are potentially good predictors. The relatively small sample (N=100) may have prevented better classification accuracy.

b. Predicting Graudates' Performance in New Units

Using the original subsets of independent variables, discharge categories were predicted for the 263 graduates to whom the 16PF was administered. Table 2 presents the discriminant functions and the classification results for the long-range prediction problem.

Table 2

Predicting Discharge Categories for
Graduates Returned to New Units

16 Personality Factors (N=263)	Background Variables (N=263)
-.601 H (Socially Bold)	.892 Months' Service Remaining
-.507 Q2 (Independent)	-.363 Offense Category
-.496 N (Astute, Shrewd)	.238 Court Martial Category
-.382 F (Happy-Go-Lucky)	-.219 Age
.354 A (Outgoing, Friendly)	.171 Number of Dependents
-.277 C (Stable Emotionally)	-.166 Marital Status
-.271 G (Persevering)	-.070 Race
-.265 Q4 (Tense, Frustrated)	.031 Education Completed
-.260 O (Apprehensive)	-.024 Highest Pay Grade
.231 Q1 (Experimenting)	.005 GT Score
.203 L (Suspicious)	

Group Centroids

| 0.218 | Honorable Discharges | -0.516 |
| -0.433 | Other Separations | 1.027 |

Predictors	Eigenvalue	Wilks' Lambda	Honorable Discharges Correctly Identified	Other Status Correctly Identified	Predictive Validity
16PF (N=263)	.095	.913	89.7%	20.5%	.665
Background Data	.534	.651	89.1%	64.8%	.810

The 16PF produced a discriminant function whose largest coefficients describe the false positives--the 88 graduates who failed to earn Honorable Discharges after returning to new duty assignments. They are characterized by the personality inventory as uninhibited (H), independent (Q2), more sophisticated (N), and carefree (F), when compared with their more successful counterparts. Separation between the groups remains quite weak, however, and the 16PF obviously failed to correctly identify those individuals who failed in subsequent duty assignments. The inventory misclassified nearly 80% of these eventual failures as graduates who would eventually earn Honorable Discharges.

In contrast, the 10 background variables produced good separation between the two groups, correctly identified nearly 90% of the Honorable Discharges and over two-thirds of the failures, for a predictive validity of .81. The discriminant function produced with these variables indicates that the amount of time remaining to serve on active duty is clearly the single most important consideration.

Discussion

The purpose in predicting graduation or failure within the training program was to obtain diagnostic information from the discriminant functions, not merely to replicate the decisions of the team cadre. We now know, for example, that graduates tend to be more conforming and more persevering than those individuals who fail to complete the program. This generalization breaks down, however, when we examine success and failure in subsequent assignments. Here, the background variables become far superior predictors of the type of discharges that graduates will eventually receive.

It is possible, if not probable, that Retraining Brigade cadre reinforce conforming behaviors during the short (two-month) program, while denying the individual sufficient opportunities to perform independently of supervision. In other words, the trainee may not experience the kind of "freedom to fail" that he eventually encounters if he is returned to duty. This explanation appears even more logical in view of the fact that many graduates who fail to obtain Honorable Discharges get into trouble after duty hours and/or independently of the normal duty performance requirements. When the graduate is returned to duty, the new freedom may require qualities of self-initiative and self-responsibility which, in many individuals, are lacking.

In April, 1980, the Brigade's Research & Evaluation Division proposed that all candidates for graduation should be screened on the basis of the individual standard score on the discriminant function produced with the 10 background variables. Originally rejected, the concept was later reviewed and endorsed by the Deputy Chief of Staff for Personnel, LTG Maxwell Thurman. By then, validation had been completed with a new sample of over 2,000 graduates returned to duty, utilizing a discriminant function including 12 background variables and offering a predictive validity approaching .85. Since May, 1982, all candidates for new duty assignments have been screened using this model. Within the next two years, after

recent graduates have had sufficient time to complete military service, Honorable Discharge (ETS) rates for graduates returned to duty are expected to reach 82%, a significant improvement over the prevailing rate of about 62% for recent years. The technique also retains the additional advantage of permitting the Retraining Brigade Commander to control both the quantity and quality of graduates returned to duty, consistent with the Army's enlisted strength requirements.

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